



Before the  
State of Rhode Island and Providence Plantations  
Public Utilities Commission

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In Re: Water Division of the City of )  
Newport for an Increase in Water Rates. ) Docket No. 3578  

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**Direct Testimony of Ernest Harwig**

1 Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

2 A My name is Ernest Harwig. My business address is 57 Cedar Summit Road,  
3 Asheville, North Carolina, 28803.

4 Q WHAT IS YOUR OCCUPATION?

5 A I have been a consultant in the field of public utility regulation for over 25 years with  
6 an emphasis on water and wastewater utilities.

7 Q PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND  
8 EXPERIENCE.

9 A These are set forth in Appendix A of my testimony.

10 Q ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

11 A I am under contract to Brubaker & Associates, Inc. and have been asked to testify on  
12 behalf of the United States Department of the Navy. The Navy Base in Newport,  
13 Rhode Island, purchases large volumes of water from the Water Division of the City of

1 Newport (Water Division or Utility), and it would experience a significant increase in  
2 its cost of water if the rates proposed by the Water Division were to become effective.

3 **Q WHAT IS THE SUBJECT OF YOUR TESTIMONY?**

4 A My testimony is limited to discussing the Cost of Service Study presented by Mr.  
5 Harold Smith of Raftelis Financial Consulting (RFC) on behalf of the Utility (Schedules  
6 RFC-1 through RFC-12). Not addressing other elements of the Utility's direct  
7 testimony should not be construed as an acceptance or endorsement of the position  
8 taken by the Water Division on any other issue.

9 **Q PLEASE SUMMARIZE YOUR TESTIMONY.**

10 A For several reasons discussed below, RFC's cost of service study does not provide a  
11 reliable guide to cost allocation among customer classes, nor does it provide a sound  
12 rate design. The reasons are as follows:

13 1. The Water Division bills the majority of its Residential customers, and significant  
14 numbers of its Commercial and Governmental customers only three times yearly.  
15 Thus, the Utility has no useful monthly class usage data to estimate monthly peak  
16 demands or to extrapolate Maximum Day demands for these classes.  
17 Additionally, there appears to be a discrepancy between the monthly usage  
18 volumes for Portsmouth Water and Fire District (PWFD) shown in Schedule  
19 RFC 5-B and the Workpaper used to develop PWFD's average day volumes.  
20 The problems caused by this lack of data will be discussed later in my testimony.

21 2. RFC lumps all supply and treatment costs together and classifies them to the  
22 Base Only (average day) category. This is improper because:

23 a. Supply and treatment costs are normally broken out and treated separately in  
24 Base-Extra Capacity cost studies, and

25 b. Treatment costs (and often supply costs) are normally classified to the Base-  
26 Maximum Day category.

27 Manipulating the classification of these costs creates unjust subsidies, as it  
28 overstates the share attributable to large volume, high load factor customers.

29 3. The test year sales volumes developed by RFC for each customer class are  
30 based on five-year averages and do not represent more recent consumption

- 1 patterns. As a result, residential sales volumes are understated, and the Navy's  
2 sales volumes are overstated. Class sales volumes from the more recent FY2001  
3 through FY2003 period are more representative and thus more appropriate for  
4 allocating Base costs.
- 5 4. RFC calculates the Utility's system Maximum Day ratios with the average of  
6 maximum month to average month ratios over several years. This understates  
7 the degree to which the system is required to meet peak day loads, and thus  
8 understates the capacity-related costs of supply, treatment, transmission and  
9 distribution operations.
- 10 5. RFC's attempt to estimate class non-coincident Maximum Day demands is clearly  
11 flawed. It results in a Residential class Maximum Day ratio that is **less** than the  
12 corresponding ratios for other customer classes, and thus under-allocates costs to  
13 this class. This result conflicts with empirical class demand studies for other  
14 water utilities and general cost of service practice, where Residential Maximum  
15 Day demand ratios are consistently **higher** than those of other classes. This is  
16 why RFC's method, by its own admission on page 13 of its direct testimony, fails  
17 the reasonableness test when comparing total class non-coincident demands to  
18 total class coincident demands.
- 19 6. A corrected cost of service study shows that RFC under-allocated costs to the  
20 Residential class and over-allocated costs to the Commercial class and the Navy.
- 21 7. The rates proposed by NWD over-collect revenues from Commercial and  
22 Governmental customers, and the Navy. My Schedule EH-1 shows class costs  
23 that more nearly reflect accepted cost of service procedures, and Schedule EH-2  
24 shows rates that recover the cost of service on the basis of the corrected cost  
25 study.

26 **Newport Cost of Service Study**

27 **Q WHAT METHODOLOGY DID RFC EMPLOY IN PERFORMING ITS COST OF**  
28 **SERVICE STUDY?**

29 A RFC used the Base-Extra Capacity Method, which is accepted by this Commission  
30 and many other state regulatory commissions for allocating the costs of providing  
31 water service to homogeneous customer classes. The three major steps in this  
32 method are the functionalization, classification and allocation of the utility's cost of  
33 service, or revenue requirement.

1            Functionalization assigns costs to the utility's basic operating functions:  
2 supply, treatment, bulk water transmission, distribution to individual customers,  
3 service lines, meter-related costs, customer billing, and fire protection. Classification  
4 assigns costs to various cost-causation categories, such as Base, or average day  
5 consumption volumes, Maximum Day and Maximum Hour rates of flow in excess of  
6 average day volumes, and costs that vary with the number of customers. Finally,  
7 allocation assigns costs to homogenous customer classes in proportion to their  
8 annual usage and the Maximum Day and Maximum Hour demands they impose on  
9 the utility.

10            The cost allocation process forms the basis for designing the rates charged to  
11 customers. Ideally, rates should track the cost of providing service as closely as  
12 practicable. This promotes revenue stability for the utility and gives customers an  
13 accurate price signal concerning the cost of the service they receive.

14    **Q        DOES THE BASE-EXTRA CAPACITY METHOD PRESCRIBE HOW EACH OF**  
15            **THESE STEPS SHOULD BE PERFORMED?**

16    **A**        No, it does not. There can be many variations in each step, depending on the  
17 individual water utility's plant configuration, the availability of useable operating and  
18 financial data, and informed judgment about the proper functionalization and  
19 causation of the utility's costs. Nonetheless, there are certain "norms" that one  
20 expects to find from one water cost study to another, based on experience and  
21 industry consensus. For example, treatment costs are typically classified with the  
22 system Base-Maximum Day ratio, and the Residential class exhibits Maximum Day  
23 and Maximum Hour ratios that are higher than those of other classes due to the  
24 demands of lawn irrigation.

1                   Departure from these “norms” leads to misallocation of costs among customer  
2                   classes and inequitable rates for service. I will discuss these departures and other  
3                   aspects of the RFC cost of service study in the remainder of my testimony.

4                   **Customer Class Data Problems**

5                   **Q       WHAT DATA DOES THE WATER DIVISION HAVE AVAILABLE TO IT FOR THE**  
6                   **PREPARATION OF A COST OF SERVICE STUDY?**

7                   A       The Water Division has available its budget by account for FY2004, and it has daily  
8                   system flow data for several years. However, it bills the majority of its Residential,  
9                   Commercial and Government customers only three times yearly. Thus, it has no  
10                  monthly class usage data with which to estimate monthly peak demands or to  
11                  extrapolate Maximum Day demands for these classes. This is a serious problem,  
12                  because it is difficult, if not impossible, to determine the peak month usage for a class  
13                  from meter readings that encompass a four-month period.

14                  RFC attempts to solve this problem by assuming, for example, that  
15                  Residential usage in the four-month billing period with the highest volume in FY2002  
16                  (July - October) was used evenly throughout that period. However, this averaging  
17                  only serves to understate the degree to which the Residential class peaked during  
18                  that period. Of course, the same problem is encountered when estimating peak  
19                  month usage for the Commercial and Government classes. As a result, the  
20                  non-coincident peak and the contribution of each class to the system peak are  
21                  under-stated. This has the effect of classifying an excessive level of costs to the  
22                  Base function, and the costs associated with meeting Maximum Day demands are  
23                  correspondingly understated.

1 Q DID YOU DISCOVER OTHER PROBLEMS WITH THE DATA USED BY RFC TO  
2 ALLOCATE COSTS?

3 A Yes, I did. A comparison of the monthly usage data for PWFD from FY2000 through  
4 FY2002 on Schedule RFC 5-B is not consistent with the monthly usage data in RFC  
5 Support Schedule 5-C1.

6 **Classification of Supply and Treatment Costs**

7 Q HOW DOES RFC CLASSIFY SUPPLY AND TREATMENT COSTS?

8 A RFC lumps all supply and treatment costs together and classifies them to the Base  
9 cost category.<sup>1</sup> This suggests that these costs are influenced only by annual usage  
10 or average daily rates of flow. This is not the conventional way to classify supply and  
11 treatment costs.

12 Q ARE SUPPLY AND TREATMENT COSTS NORMALLY CLASSIFIED WITH THE  
13 BASE-ONLY FACTOR?

14 A No. I would note first that all water cost of service studies I am familiar with separated  
15 supply costs from treatment costs. Second, these studies unanimously classified  
16 treatment costs with the Base-Maximum Day factor because treatment facilities must  
17 be sized to meet Maximum Day rates of flow. RFC's study is the first and only study I  
18 have seen that classifies treatment costs with the Base-only factor. I believe this is  
19 improper because it does not reflect cost-causation.

20 Supply costs can be classified with either the Base-only factor or the  
21 Base-Maximum Day factor. The guidelines for applying these factors are found on  
22 pages 52 through 54 in Chapter 7 of *Principles of Water Rates, Fees and Charges*,

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<sup>1</sup>Table 3b in Schedule RFC-3.

1 Manual M-1, Fifth Edition, published by the American Water Works Association. To  
2 summarize, the supply costs associated with reservoirs may be classified with either  
3 the Base-only or Base-Maximum Day factor, and wells costs may be classified with  
4 the Base-Maximum Day factor.

5 **Q WHAT IS THE EFFECT OF CLASSIFYING ALL SUPPLY AND TREATMENT**  
6 **COSTS WITH THE BASE-ONLY FACTOR?**

7 A The Base-only factor assigns costs solely on the basis of consumption volumes,  
8 regardless of when they occur. As a result, the capacity-related costs go  
9 unrecognized, and those customers who impose the highest peak demands on the  
10 system do not receive their proportionate share of cost responsibility. Conversely,  
11 customers who take larger volumes at a more even rate throughout the day are  
12 saddled with costs they did not impose on the utility.

13 **Q RFC CLASSIFIED TRANSMISSION AND DISTRIBUTION COSTS WITH THE**  
14 **BASE-MAXIMUM DAY FACTOR. HOW WAS THIS FACTOR CALCULATED?**

15 A RFC combined monthly pumping data from Newport's two treatment plants over the  
16 FY2000 - FY2002 period. RFC then calculated an average Maximum Day to Average  
17 Day ratio for each Fiscal Year. Finally, RFC took an average of the three annual  
18 average ratios and arrived at a Base-Maximum Day factor of 75.8% Base to 24.2%  
19 Maximum Day. This calculation is shown in Schedule RFC 5-A. In other words, only  
20 24.2% of transmission and distribution costs are classified to the Maximum Day cost  
21 category.

1 Q IS THIS CALCULATION AN APPROPRIATE WAY TO DERIVE A SYSTEM  
2 BASE-MAXIMUM DAY RATIO FOR NEWPORT?

3 A No, it is not. This averaging process seriously understates the extent to which the  
4 supply and treatment facilities must meet Maximum Day demands and the very idea  
5 of an "average" Maximum Day flow is wrong-headed. This is because the averaging  
6 process counts the Maximum Day flows recorded during each month of the year.  
7 Clearly, 11 of the 12 maximum day readings are less than the recorded Maximum  
8 Day for the year.

9 Again, this can be illustrated by referring to RFC Schedule 5-A, page 2. It  
10 shows that the Water Division pumped about 7.34 million gallons on an average day  
11 (MGD) over the three-year period. The Base-Maximum Day ratio developed by RFC  
12 implies that the Water Division must pump only about 9.68 million gallons on a peak  
13 day (7.34 MGD divided by 0.758 = 9.68 MGD). However, the Water Division's own  
14 data show that supply and treatment facilities had to meet Maximum Day demands of  
15 14.03 MGD, 12.13 MGD and 11.77 MGD in July 1999, July 2000 and August 2001,  
16 respectively.

17 Using the actual recorded Maximum Day flows for each year, the  
18 Base-Maximum Day factor for each Fiscal Year would have been 53.5%  
19 Base - 46.5% Maximum Day, 59.1% Base - 40.9% Maximum Day, and 62.3%  
20 Base - 37.7% Maximum Day, respectively. Even using RFC's averaging procedure  
21 for the sake of argument only, the Base-Maximum Day ratio would be 58.3%  
22 Base - 41.7% Maximum Day. In other words, 41.7%, and not 24.2%, of transmission  
23 and distribution costs would have been classified to the Maximum Day cost-causative  
24 category. This is more consistent with the methodology outlined in AWWA Manual  
25 M-1.

1 **Class Consumption Volumes**

2 **Q HOW DID RFC CALCULATE CLASS ANNUAL CONSUMPTION VOLUMES FOR**  
3 **COST ALLOCATION PURPOSES?**

4 A RFC averaged the annual consumption volumes for each class over the five-year  
5 FY1999 - FY2003 period. It then applied a 0.73% growth factor to the consumption of  
6 each class averaged over the five years. The 0.73% growth rate represents the  
7 average rate of annual growth over the FY1999 - FY2003 period. This is shown in  
8 Schedule RFC 5-C.

9 **Q DOES THIS CALCULATION PRODUCE A REPRESENTATIVE ANNUAL FLOW**  
10 **VOLUME FOR EACH CLASS?**

11 A Not in all cases. An examination of the annual class consumption data in RFC  
12 Schedule 5-C shows that Residential usage has been increasing steadily over the  
13 five-year period. On the other hand, the Navy's usage decreased somewhat between  
14 FY1999 and FY2001. It decreased by nearly a third in FY2002, and increased in  
15 FY2003 over the FY2002 level, but still about 23% below the FY2001 level. Likewise,  
16 Commercial usage is down significantly in FY2002 and FY2003 from earlier levels.

17 RFC's averaging procedure gives equal weight to consumption volumes from  
18 as long ago as five years, and it is thus not indicative of more recent experience. As  
19 a result, Residential consumption is understated, and Navy and Commercial usages  
20 are overstated.

1 Q WHAT CLASS USAGE VOLUMES WOULD BE MORE APPROPRIATE FOR THE  
2 ALLOCATION OF BASE COSTS?

3 A I believe that an average of class consumption volumes recorded between FY2001  
4 and FY2003 are more appropriate. The year-to-year changes in class consumption  
5 are relatively minor over this time period. Thus, these years' experience is more  
6 representative of recent class usage trends.

7 **Class Maximum Day Allocation Factors**

8 Q HOW DOES RFC CALCULATE CUSTOMER CLASS CAPACITY FACTORS?

9 A As I stated earlier, the Water Division does not record peak day or peak hour  
10 demands by customer class. Thus, actual data are unavailable. To estimate class  
11 Maximum Day and Maximum Hour demands, RFC uses a procedure set forth in  
12 Appendix A of the AWWA Rates Manual cited earlier. In summary, the procedure  
13 develops a Maximum month flow to average day ratio for each class, and then  
14 multiplies this unique class ratio by the system coincident Maximum Day ratio.

15 The example in Appendix A assumes that the water utility has monthly flow  
16 data available to it. Newport, however, bills its Residential customers, its largest and  
17 most numerous class, only three times yearly. Thus, it does not have the accurate  
18 monthly data necessary for incorporation into the estimation of Residential class  
19 peaks. RFC attempts to surmount this difficulty by calculating a surrogate Maximum  
20 Month flow over the FY1999 - FY2003 period. The Maximum Month volume for each  
21 year in the period was divided by 30 to estimate a Maximum Day flow.

1 **Q DOES RFC'S AVERAGING OF MAXIMUM MONTHS' FLOWS YIELD A**  
2 **REASONABLE MAXIMUM DAY RATIO FOR THE RESIDENTIAL CLASS?**

3 A No, it does not. RFC obtains a residential class Maximum Day ratio of only 1.44.<sup>2</sup>  
4 RFC's analogous Maximum Day ratios for all other customer classes, with the  
5 exception of the Navy, are in the range of 2.0 times average day flow. This result is  
6 counter-intuitive at the least, since the Residential class typically exhibits the highest  
7 Maximum Day ratio of any customer class.

8 I also note that the Maximum Day ratio for the entire system in FY2000 was  
9 1.87 according to the Utility's actual data. This means that the Maximum Day ratio for  
10 the Residential class (1.44) is lower than the system peak ratio. I cannot agree with  
11 this result because the class non-coincident Maximum Day ratio should be greater  
12 than the system coincident Maximum Day ratio. Thus, the Maximum Day ratio for the  
13 system peak ratio.

14 **Q HOW DOES RFC EXPLAIN THIS ANOMALY?**

15 A In response to PWF's Data Request No. 1-12, Mr. Smith states that "...analysis of  
16 the customer class demand characteristics raised questions regarding the accuracy  
17 of the existing customer classifications", and that "...some customers may have been  
18 misclassified since [the] relationship between Residential and Commercial class  
19 peaking factors is inconsistent with the relationship that would have been expected  
20 and is experienced by most utilities where the peaking factors exhibited by the  
21 residential class are higher than those of the Commercial class."

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<sup>2</sup>RFC Schedule 5-D, page 2.

1    **Q     DID RFC TEST THE REASONABLENESS OF THE RATIO OF THE CLASS**  
2           **NON-COINCIDENT PEAKS TO CLASS COINCIDENT PEAKS?**

3    A     Yes, it did. This is shown on page 2 of RFC Schedule 5-D. RFC applied the method  
4           shown in Appendix A of the AWWA Manual. The Manual states that the ratio should  
5           fall between 1.10 and 1.40. RFC's ratio is 1.09.

6    **Q     HOW DID RFC EXPLAIN THIS RESULT?**

7    A     On page 13 of his direct testimony, Mr. Smith opines that "...the unique nature of  
8           Newport's usage patterns given its unique tourism industry may explain the  
9           difference..."

10   **Q     DO YOU AGREE?**

11   A     No. If better data had been available, or if RFC had used a more typical Residential  
12          Maximum Day demand factor, the result would have fallen within the bounds found in  
13          the AWWA Manual.

14   **Q     PLEASE SUMMARIZE YOUR TESTIMONY THUS FAR.**

15   A     I believe the RFC study suffers from basic data problems, and it has made serious  
16          errors in its cost functionalization and in its development of system and class  
17          Maximum Day allocators. For these reasons, I do not believe the RFC cost of service  
18          study provides a supportable basis for the design of customer class rates in this  
19          Docket. For these reasons, I do not believe the RFC cost of service study provides a  
20          supportable basis for the design of customer class rates in this case.

1    **Q     HAVE YOU ATTEMPTED TO CORRECT THE ELEMENTS OF THE RFC STUDY**  
2           **YOU HAVE DISCUSSED ABOVE?**

3    A    Yes, I have. In brief, I have calculated a system Base-Maximum Day classification  
4           factor with the actual recorded maximum day volumes in Fiscal Years 2000 through  
5           2002. These figures are found in Schedule RFC 5-A, page 2. I applied this factor to  
6           the supply and treatment costs in accordance with the accepted methodology in  
7           AWWA Manual M-1. I also incorporated average class water sales from FY2001  
8           through FY2003. Finally, since the available monthly class usage data is deficient, I  
9           have chosen class Maximum Day factors for the Residential class and the Navy Base  
10          that are based on my experience and judgment, and are more in accord with those  
11          found in the AWWA Manual.

12   **Q     WHAT IS THE RESULT OF YOUR CORRECTED COST STUDY?**

13   A    The resulting costs to be recovered from each class through commodity rates are  
14          shown in my Schedule EH-1, and they are compared to the class commodity costs  
15          appearing in RFC Schedule 3, Table 3-f. As a result of my adjustments, cost  
16          responsibility increases for the Residential class and for PWFD. Likewise, cost  
17          responsibility decreases for the Commercial, Government and Navy classes

18                 The corresponding commodity rates are shown in Schedule EH-2. The rates  
19                 are calculated by dividing the costs in Schedule EH-1 by the average class  
20                 commodity sales I developed for the FY2004 test year. Note that my study produces  
21                 a wider disparity among the uniform commodity rates for retail classes than does the  
22                 RFC study. The Navy commodity rate becomes \$2.17 instead of \$2.41, and the  
23                 commodity rate for PWFD becomes \$2.01 instead of the \$1.93 proposed by the  
24                 Utility.

1 Q ARE YOU RECOMMENDING THAT THE COMMISSION ADOPT THESE  
2 COMMODITY RATES?

3 A No. They are based on Newport's requested level of revenues, which may be  
4 adjusted by the Commission. My primary intention is to show how improvements to  
5 the Water Division's cost of service study, in the form of more conventionally  
6 accepted classification of costs and more plausible system and class allocation  
7 factors, affect the allocation of costs among customer classes. The results of my  
8 corrected study conform more closely to the results found in the example in the  
9 AWWA Manual and to other cost studies I have either performed or reviewed.

10 Q DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

11 A Yes, it does.

**Qualifications of Ernest Harwig**

1   **Q     PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2   A     Ernest Harwig. My business mailing address is 57 Cedar Summit Road, Asheville,  
3         NC 28803.

4   **Q     WHAT IS YOUR OCCUPATION?**

5   A     I am an independent contractor and am a consultant in the field of public utility  
6         regulation. I have been retained in this matter by Brubaker & Associates, Inc.,  
7         energy, economic and regulatory consultants.

8   **Q     PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.**

9   A     I graduated from Austin College with a Bachelor of Arts Degree in Economics.  
10        Subsequently, I received a Master of Arts Degree in International Economics from  
11        Texas Tech University. I later attended seminars in Economics at the University of  
12        Cologne in the Federal Republic of Germany. I also received a Master of Arts Degree  
13        while completing all course work towards the Ph.D. at Southern Methodist University.  
14        My major field was Industrial Organization.

15                 Prior to 1975, I was employed as a utility rate analyst with the Public Service  
16        Commission of Wisconsin, where I represented the Staff in private and municipal  
17        electric utility rate cases. I also prepared exhibits for presentation in major electric  
18        utility rate cases.

19                 I joined the firm of Drazen-Brubaker & Associates, Inc. in September 1975. In  
20        April 1995, the firm of Brubaker & Associates, Inc. (BAI) was formed. It included most  
21        of the former DBA principals and staff. At BAI, I was engaged in the preparation of

1 testimony and exhibits relating to electric, gas, water, wastewater and steam utilities.  
2 These included determinations of rate base, operating income and depreciation rates;  
3 the performance of cost of service studies; and the design of rates for utility services.  
4 I have also provided technical assistance in the negotiation of contracts for water and  
5 wastewater services between municipal suppliers and industrial customers. I have  
6 been a member of the American Water Works Association since 1986.

7 **Q ARE YOU THE AUTHOR OF ANY PUBLICATIONS?**

8 A Yes. I am the co-author of two articles: "Municipal Electric Utility Pricing," which  
9 appeared in the February 1976 issue of *Governmental Finance*, and "Water Rates:  
10 An Industrial User's View," which appeared in the May 1986 issue of *Journal AWWA*.

11 **Q HAVE YOU PREVIOUSLY APPEARED BEFORE A REGULATORY COMMISSION?**

12 A Yes. I have testified before the public utility regulatory commissions of Alabama,  
13 California, Delaware, Illinois, Indiana, Kentucky, Minnesota, Missouri, New  
14 Hampshire, Pennsylvania, Rhode Island, Tennessee, Texas, West Virginia and  
15 Wisconsin. In addition, I have assisted both utility customers and suppliers in local  
16 rate proceedings and contract negotiations for water and wastewater services in  
17 about 20 states.

**NEWPORT WATER DIVISION**  
**RIPUC Docket No. 3578**

**Comparison of Retail and Wholesale  
Class Commodity Cost Allocation  
FY2004**

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Line	Customer Class	RFC Cost of Service Study (1)	Corrected Cost of Service Study (2)	Difference (3)
	Retail:			
1	Residential	\$ 2,452,212	\$ 2,898,050	\$ 445,838
2	Commercial	2,293,312	1,959,432	(333,880)
3	Government	<u>67,340</u>	<u>60,603</u>	<u>(6,737)</u>
4	Total Retail	4,812,864	4,918,085	105,221
5	Navy	994,707	805,101	(189,606)
6	Portsmouth FWD	<u>811,090</u>	<u>895,474</u>	<u>84,384</u>
7	Total	\$ 6,618,661	\$ 6,618,660	\$ (1)

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Source: Schedule RFC -3

**NEWPORT WATER DIVISION**  
**RIPUC Docket No. 3578**

**Comparison of Retail and Wholesale  
Class Commodity Rates  
FY2004**

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Line	Customer Class	Cost of Service Study		Difference in Rates		
		RFC Cost of Service Study (1)	Corrected Cost of Service Study (2)	Amount (3)	Percent (4)	
Retail:						
1	Residential	\$ 3.42	\$ 3.84	\$ 0.42	12.28%	
2	Commercial	3.66	3.35	(0.31)	-8.47%	
3	Government	3.59	3.09	(0.50)	-13.93%	
4	Navy	2.41	2.17	(0.24)	-9.96%	
5	Portsmouth FWD	1.93	2.01	0.08	4.15%	